



Automatic  
Folding Doors

**DORMA**

**FFT  
FFT-F**

## Minimum space requirement, easy to install, economical and safe

If the door opening is narrow or if there is not much depth available – or both – then DORMA Automatic Folding Doors may well be the ideal answer. They ensure maximum utilisation of structural widths – with clear passage widths of almost the same dimension. They do not swing out when opened and their depth is only a quarter of the clear passage width.

The DORMA Automatic Folding Door range includes not only FFT standard doors but also FFT-F doors for emergency exits and escape routes. The system offers a wide range of sizes to ensure maximum cost-efficiency for each individual solution. The doors are supplied ready to fix and can be installed and commissioned by a DORMA team if required.

### Convenient, reliable and safe

The electronically controlled ES 90 and ES 90-FST operators can be fully relied upon to ensure smooth, fast-response door operation. And, by continuously monitoring the passage area, they also ensure maximum user safety. The door leaves remain stationary during user presence and are

automatically stopped at the merest contact with an obstruction.

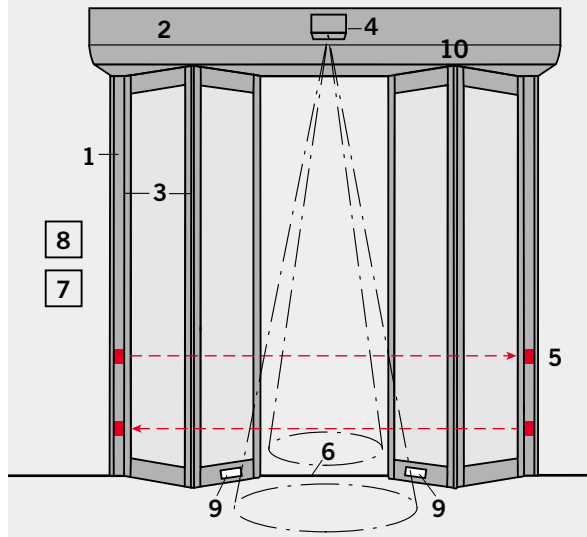
Integrated seals provide effective protection against heat loss and drafts. The hinges operate free of noise and are of nip-free design. No floor guide is necessary for doors of clear passage widths less than 1500 mm.

### For emergency exits and escape routes

The FFT-F version of these DORMA Automatic Folding Doors is equipped with an innovative electronic expansion module (EM 5), a redundant operator system and a special radar motion detector. These doors are type-approved in Germany for emergency exits and escape routes with opening widths of 900 to 2000 mm.



## Mechanical design and standard equipment

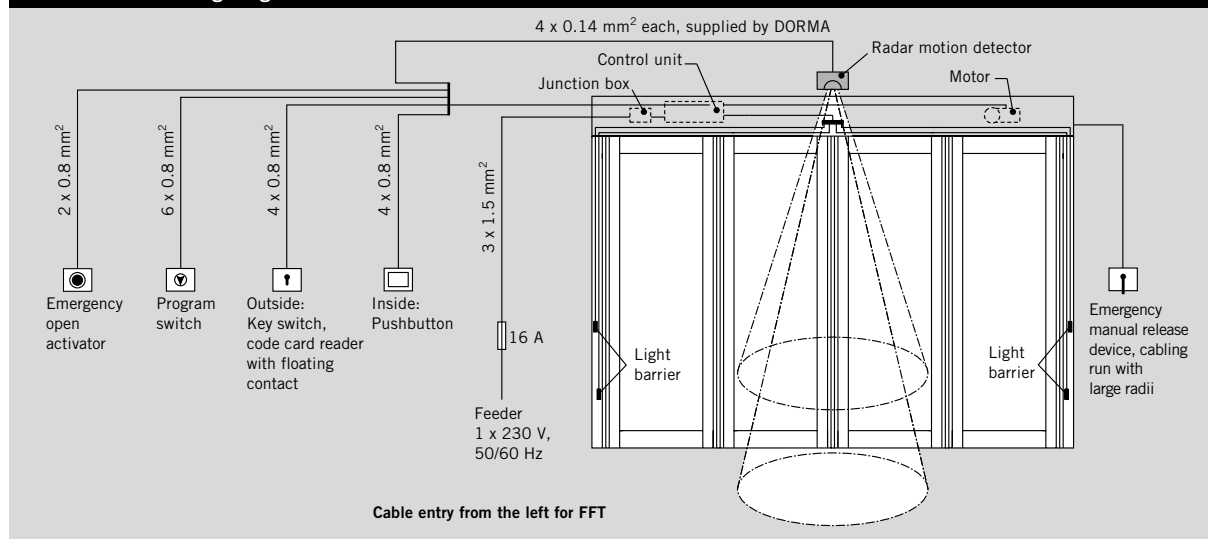


- |  |   |
|--|---|
| 1 Door frame with mounting profile   | 5 Safety light barriers (200 and 1000 mm above FFL) |
| 2 Fully enclosed operator with integrated electronic control                     | 6 Floor guide (recommended for widths >1500 mm)     |
| 3 Door leaves with double glazing – other glazing or infill available on request | 7 Program switch                                    |
| 4 Activator, e.g. radar motion detector  | 8 Emergency manual release device                   |
|  | 9 Floor lock (option)                               |
|  | 10 Header bolts                                     |

## Benefits and features

- Ideal for narrow openings
- No lateral space requirement
- Easy to install or retrofit
- Nip-free profiles
- High safety standard
- Low-noise operation
- No outward swing
- Minimal space requirement when opened
- Free floor area
- Very economical and reliable
- Quality-assured manufacture
- Also suitable for emergency exits and escape routes (FFT-F)

## DORMA FFT-F wiring diagram



Dimensions and design details	FFT	FFT-F
Clear passage width LW	800–2000 mm	900–2000 mm
Clear passage height LH	2100–2500 mm	
Glazing thickness 20 mm		
Safety double glazing	●	
Adjustable floor guide		
– for LW < 1500 mm	○	
– for LW ≥ 1500 mm	●	
Operator dimensions		
– Height	200 mm	200 mm
– Depth	237 mm	260 mm
Round-edged operator cover	●	
Square-edged operator cover	○	
Fan light	○	
Opaque panel	○	
Nip-free		
G-Iso d.g. profile system	●	
Sealed bearings in door leaves	●	

Drive and control system	FFT	FFT-F
Operator	ES 90	ES 90-FST
Expansion module EM 4	●	–
Expansion module EM 5	–	●
Designed with reinforced toothed belt		●
Activation by intrinsically safe detector in escape direction	–	●
Short-circuit-proof switched power pack		●
Microprocessor control		●
Function programs		
– Off		●
– Automatic		●
– Permanent open		●
– Exit only		●
– Night-bank control		●
Connection for airlock control	○	–
Delayed action for cheque and code card reader or key switch		○
Self-learning		●
Light barriers, self-monitored (2 pairs)		●
Automatic reverse		●
Power fail mode:		
– Fail-safe	■	●
– Fail-secure	■	–
Program selector CP 90/CP 90 C	○	–
Connection for access control system		●
Bell contact		●
Door status signalling		○
Module for connection to EIB building management system		○

Optional accessories	FFT	FFT-F
Locking system		
– with electro-mechanical header bolts	○	–
– with manual release	○	○*
Floor lock		
– for LW 1300 to 1500 mm with strike plate	○	○*
– for LW > 1500 mm with strike plate, without floor guide rail	○	○*
Visual fault display	○	○
Battery pack		●
UPS module		○

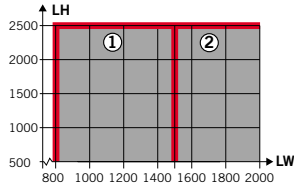
\* As use of the lock disables the emergency exit function only authorised personnel should be allowed to lock the door.

Technical data	FFT	FFT-F
Suitable for emergency exits and escape routes	–	●
Opening and closing force variable up to max. 150 N		●
Parameter adjustment		●
Opening speed, variable	100 – 600 mm/s	
Closing speed, variable	100 – 550 mm/s	
Creep speed, variable	30 – 90 mm/s	
Hold-open time, variable	0 – 180 s	
Emergency opening by preloaded spring	–	●
Power supply data	230 V, 50/60 Hz	
Power consumption		
– max.	360 W	
– Average	30 W	
Outgoing power supply	24 V, 2 A	
Class of protection	IP 20	
Type-approved by the German TÜV		●
Compliant with EU low-voltage directives		●
Quality-assured manufacture to ISO 9000		●

● standard ○ optional extra ■ alternatives

Face fixing (wall installation)

FFT (2-leaf)

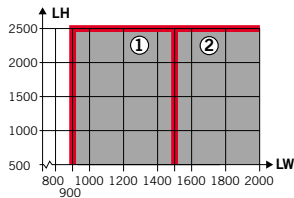


Glazing:

① LW = 800 – 1500 mm  
2 x LSG each 6 mm  
(3 + 3) / 8 / (3 + 3)  
(float glass)

② LW = 1500 – 2000 mm  
2 x TSG each 4 mm  
4/12/4 mm

FFT-F (2-leaf)



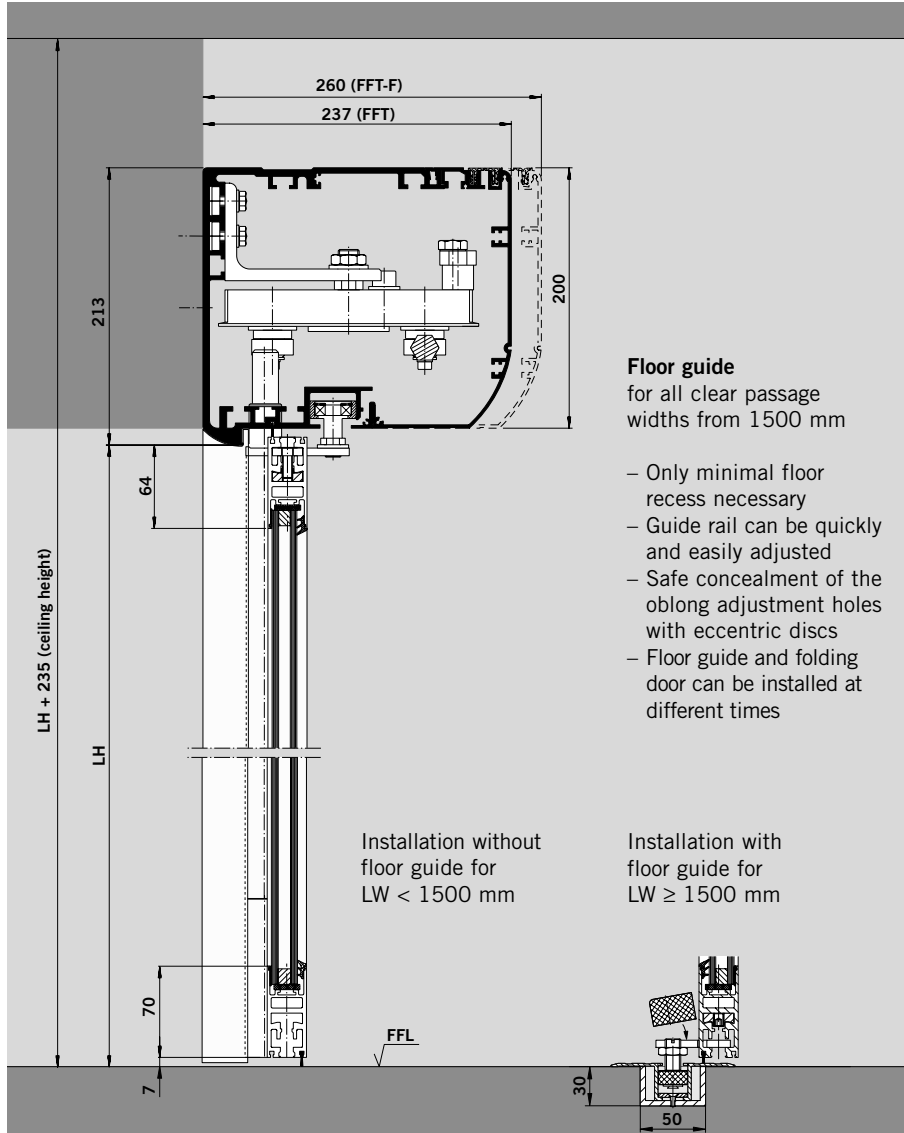
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(float glass)

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2 x TSG each 4 mm  
4/12/4 mm

FFT-F for emergency exits and escape routes

- LW = Clear passage width
- LH = Clear passage height
- B = Overall width
- C = Overall distance between open, folded leaves
- D = Depth of open, folded leaves
- LSG = Laminated safety glass
- TSG = Toughened safety glass

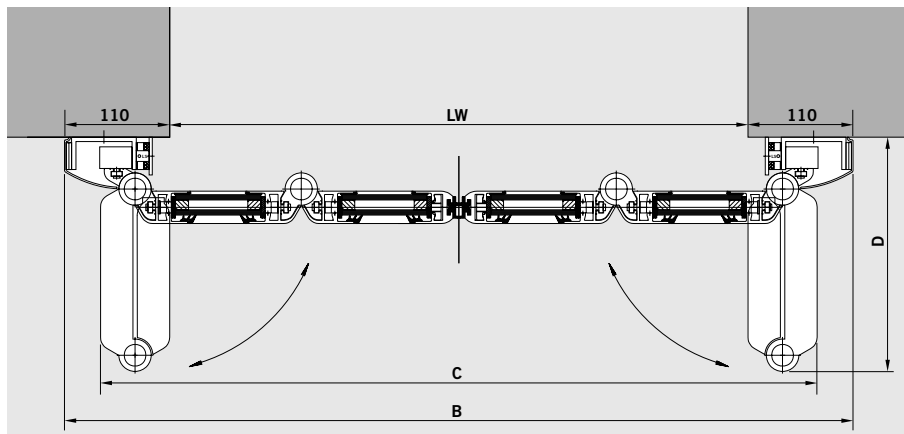


**Floor guide**  
for all clear passage widths from 1500 mm

- Only minimal floor recess necessary
- Guide rail can be quickly and easily adjusted
- Safe concealment of the oblong adjustment holes with eccentric discs
- Floor guide and folding door can be installed at different times

Installation without floor guide for LW < 1500 mm

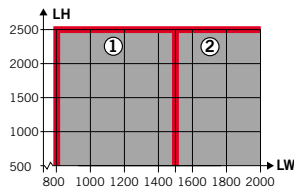
Installation with floor guide for LW ≥ 1500 mm



Face fixed FFT			FFT-F											
LW		800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
B	B = LW + 220	1020	1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120	2220
C	C = LW + 144	944	1044	1144	1244	1344	1444	1544	1644	1744	1844	1944	2044	2144
D	D = LW/4 + 87	287	312	337	362	387	412	437	462	487	512	537	562	587

### Corridor fixing (passageway installation)

#### FFT (2-leaf)

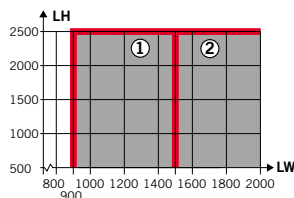


#### Glazing:

① LW = 800 – 1500 mm  
2 x LSG each 6 mm  
(3 + 3) / 8 / (3 + 3)  
(float glass)

② LW = 1500 – 2000 mm  
2 x TSG each 4 mm  
4/12/4 mm

#### FFT-F (2-leaf)



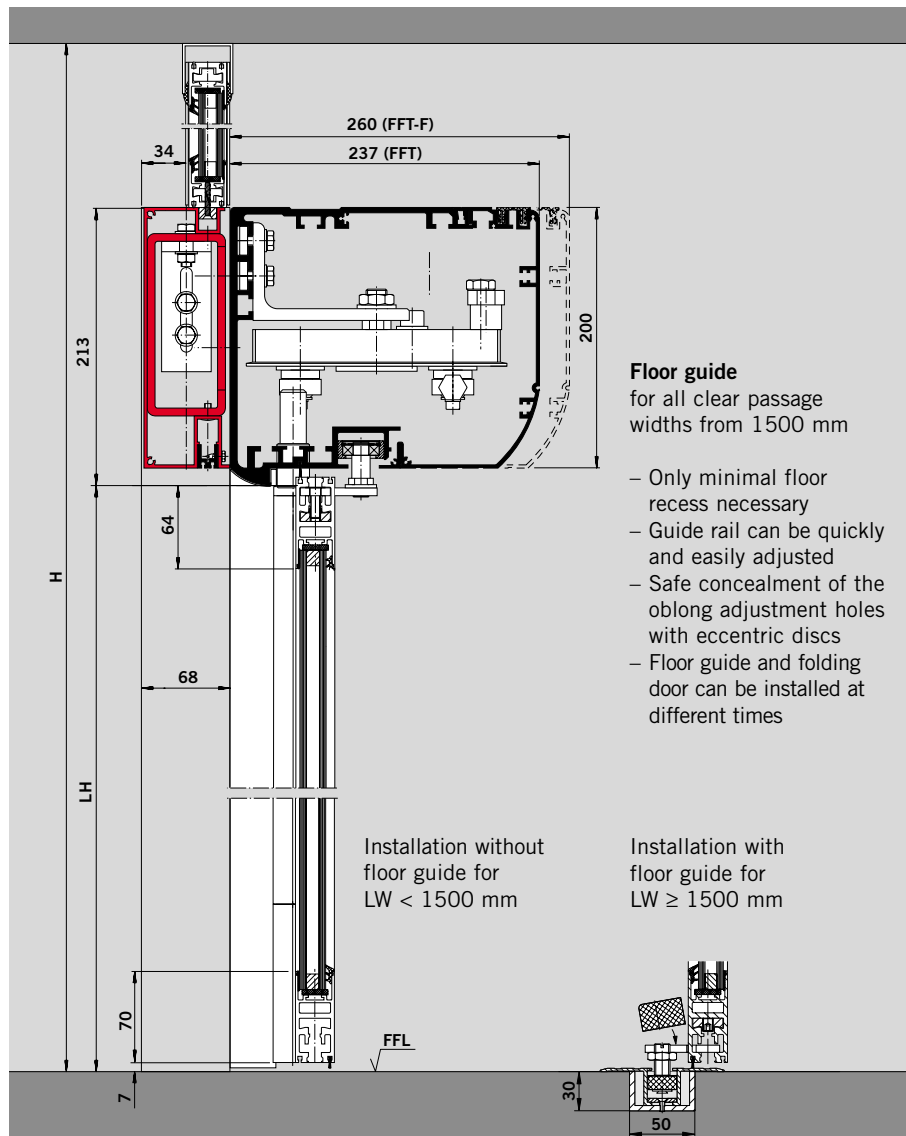
#### Glazing:

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2 x LSG each 6 mm  
(3 + 3) / 8 / (3 + 3)  
(float glass)

② LW = 1500 – 2000 mm  
2 x TSG each 4 mm  
4/12/4 mm

FFT-F for emergency exits and escape routes

- LW = Clear passage width
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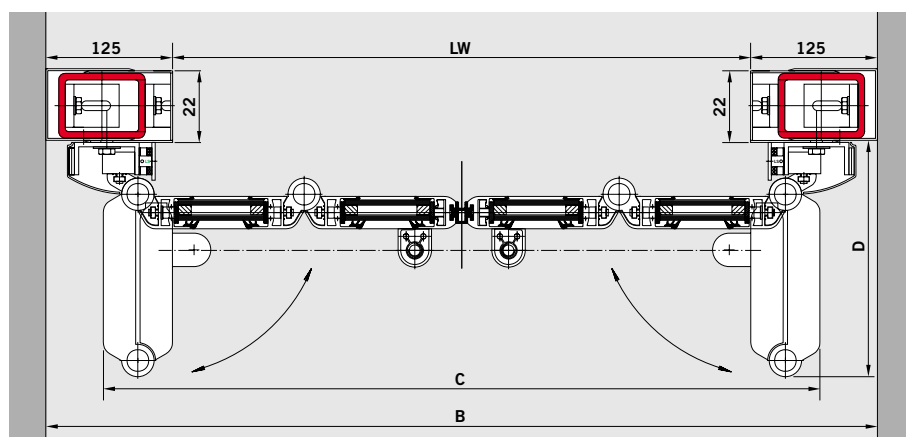
#### Floor guide

for all clear passage widths from 1500 mm

- Only minimal floor recess necessary
- Guide rail can be quickly and easily adjusted
- Safe concealment of the oblong adjustment holes with eccentric discs
- Floor guide and folding door can be installed at different times

Installation without floor guide for LW < 1500 mm

Installation with floor guide for LW ≥ 1500 mm



Corridor-fixed FFT			FFT-F											
LW		800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
B	B = LW + 250	1050	1150	1250	1350	1450	1550	1650	1750	1850	1950	2050	2150	2250
C	C = LW + 144	944	1044	1144	1244	1344	1444	1544	1644	1744	1844	1944	2044	2144
D	D = LW/4 + 87	287	312	337	362	387	412	437	462	487	512	537	562	587

CP 90 program selector



- Program selection
- Indication of the current program
- Adjustment of basic parameters
- CP 90 C with timer function
- CP 90 N for night-bank mode (additional to CP 90 or CP 90 C)
- Display of error codes for remote diagnostics
- Available in black, white and silver
- Dimensions (W x H) 48 x 125 mm
- for FFT

Program switches



- External installation
- Concealed or surface-mounted units
- Lockable/Rotary knob
- Suitable for standard flush-mounting boxes
- Can be integrated with an emergency-stop switch in a double frame
- Key switches, concealed or surface-mounted

Radar motion detectors



- Eagle system
- Directionally sensitive, self-monitored or standard model
- Any combination of radar heads
- No official licence fees (in most countries)
- No effect on pacemakers with a very low output of just approx. 2 mW
- No interference from mobile phones

Switches/Pushbuttons



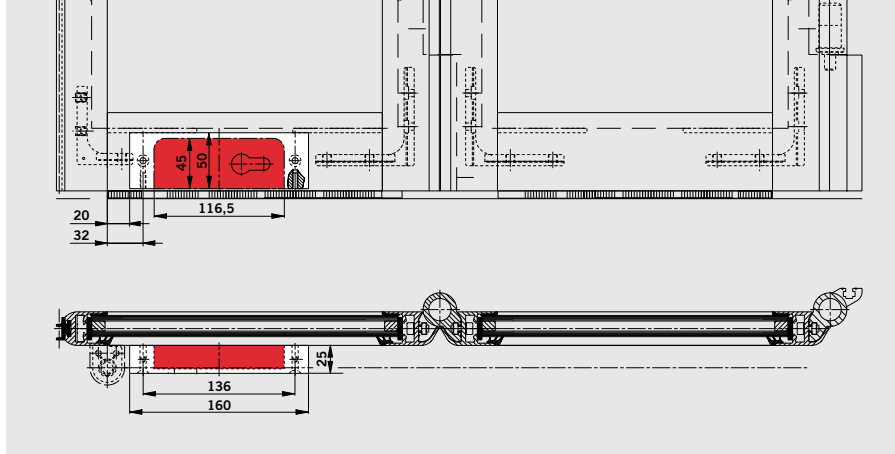
- Concealed and surface-mounted
- Stainless steel finishes
- Water-resistant models
- Keypads for access control systems
- Various pushbutton and switch designs

Hand terminal



- Fast and problem-free commissioning of DORMA Automatic doors
- Adjustment of basic parameters
- Simple and reliable diagnostics in the event of malfunctions
- Plain text

Lock case with floor lock



- Reliable locking action; only for doors with no floor guide rail



## Specification texts

**DORMA FFT**

DORMA FFT automatic folding door of nip-free fine-framed construction with side mounting profiles. Fail-safe or fail-secure (back-up battery pack); with automatic monitoring and control of the door leaf movements. Manufactured in accordance with German code of practice ZH 1/494 governing power-operated windows, doors and gates, German UVV (accident prevention) regulations, and VDE (Association of German Engineers) regulations (latest edition in each case). Quality-assured manufacture, registered to ISO 9000. Equipped with two self-monitoring light barriers. With DORMA ES 90 sliding door operator with micro-processor control, self-learning, with intelligent RS 485 interface.

**Power supply data:** 230 V, 50/60 Hz

**Locking system:**

- electro-mechanical locking system  
 with manual release  
 floor lock for clear passage widths from 1300 mm, without floor guide

**Manual release device for the electro-mechanical locking system:**

- internal  external  no lock

**Drive unit options:**

- module for interfacing with building management systems (EIB compatible)  
 external emergency power supply for approx. 30 minutes continuous operation

**Activators:**

- standard radar motion detectors  
 radar motion detectors, directionally sensitive  
 pushbuttons  
 other activators, type: ...

**Program switch modes:**

Off, Automatic, Permanent open, Exit only, Night-bank control  
 airlock control with two doors arranged in tandem

**Program switch type:**

- lockable  not lockable  
 CP 90 intelligent program selector, external

**Program switch installation:**

- external, concealed  external, surface-mounted

**Emergency open activator:**

- external, concealed  external, surface-mounted  
 external under glass  none

**Dimensions:**

- Overall width B = .... mm  
 – Overall height H = .... mm  
 – Clear passage width LW = .... mm  
 – Clear passage height LH = .... mm

**Header construction:**

- wall or lintel face-fixing  corridor fixing (passageway installation)

**Operator cover:**

- round-edged  square-edged

**Leaf construction:**

- TSG double glazing, 20 mm, clear  LSG 8 mm, clear  
 special filler panelling

**Fan light:**

- no fan light, no infill/opaque panel  
 with single-piece fan light  with opaque panel

**Fan light glazing:**

- 20 mm double glazing, 2 x clear float glass  
 glazing same as leaves  special glazing ...

**Colour of aluminium parts:**

- silver anodised, E6/C0  similar to RAL ...  
 dark brown anodised, E6/C34  special colour ...

**DORMA FFT-F**

DORMA FFT-F automatic emergency escape folding door of nip-free fine-framed construction with side mounting profiles. Fail-safe, i.e. opens on power failure (back-up battery pack); with automatic monitoring and control of the door leaf movements. Manufactured in accordance with German code of practice ZH 1/494 governing power-operated windows, doors and gates, German UVV (accident prevention) regulations, and VDE (Association of German Engineers) regulations (latest edition in each case). Quality-assured manufacture, registered to ISO 9000. Equipped with self-monitoring light barriers and self-monitoring radar movement detector for the escape/egress direction. With DORMA ES 90-FST sliding door operator with microprocessor control, self-learning, with intelligent RS 485 interface.

**Power supply data:** 230 V, 50/60 Hz

**Locking system:**

- electro-mechanical locking system with manual release  
 floor lock for clear passage widths from 1300 mm, without floor guide

**Design of manual release device:**

- internal  external  no lock

**Drive unit options:**

- module for interfacing with building management systems (EIB compatible)  
 external emergency power supply for approx. 30 minutes continuous operation

**Activators:**

- self-monitored radar motion detector in the escape direction  
 standard radar motion detector in the non-escape direction  
 directionally sensitive motion detector in the non-escape direction  
 pushbutton in the non-escape direction  
 other activator in the non-escape direction, type: ...

**Program switch modes:**

Off, Automatic, Permanent open, Exit only, Night-bank control

**Installation of lockable program switch:**

- external, concealed  external, surface-mounted

**Emergency open activator:**

- external, concealed  external, surface-mounted  
 external under glass  none

**Dimensions:**

- Overall width B = .... mm  
 – Overall height H = .... mm  
 – Clear passage width LW (900 – 2000 mm) = .... mm  
 – Clear passage height LH = .... mm

**Header construction:**

- wall or lintel face-fixing  corridor fixing (passageway installation)

**Operator cover:**

- round-edged  square-edged

**Leaf construction:**

- TSG double glazing, 20 mm, clear  LSG 8 mm, clear  
 special filler panelling

**Fan light:**

- no fan light, no infill/opaque panel  
 with single-piece fan light  with opaque panel

**Fan light glazing:**

- 20 mm double glazing, 2 x clear float glass  
 glazing same as leaves  special glazing ...

**Colour of aluminium parts:**

- silver anodised, E6/C0  similar to RAL ...  
 dark brown anodised, E6/C34  special colour ...

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